Hexavalent Chromium in Drinking Water

A report released by the Environmental Working Group in late December 2010 brought nationwide interest in hexavalent chromium in drinking water.

Chromium, a metallic element, is found in rocks, soil, plants, and animals. The most common forms of chromium in the environment are trivalent (chromium-3), hexavalent (chromium-6) and the metal form, chromium-0.

EPA has a drinking water standard of 0.1 mg/L (100 ug/L) for total chromium, which includes all forms of chromium. This standard was established in 1991 based on the best available science at that time. There is no specific standard for hexavalent chromium.

Note:

1 milligram per liter (mg/L) = 1 part per million (ppm)
1 microgram per liter (ug/L) = 1 part per billion (ppb)
1 mg/L or ppm = 1,000 ug/L or ppb

Washington Aqueduct tests the water frequently for total chromium. We find ranges of zero to 4 ug/L. Therefore, on average we're about 50 times less than the EPA chromium standard (0.1 mg/L or 100 ug/L). This testing does not differentiate among the chemical valences that chromium can exist in. (Chromium will fluctuate among the valences according to the pH of the liquid it is in).

EPA began review of chromium-6 health effects in 2008. A draft report is currently under review and is scheduled to be released later this year.

In the wake of the media reports and EPA's interest in looking specifically at hexavalent chromium Washington Aqueduct collected samples of its raw and finished water and sent these samples to two independent laboratories using methods to evaluate hexavalent chromium at very low concentrations.

The results of this sampling (shown as parts per billion) are as follows:

Source water:

Total Chromium: 1.0 ug/L (duplicate: 0.90 ug/L)
Hexavalent Chromium: Lab A: 0.064 ug/L (duplicate: 0.059 ug/L)
Hexavalent Chromium: Lab B: 0.07 ug/L (duplicate: 0.09 ug/L)

Dalecarlia finished water:

Total Chromium: 2.2 ug/L (duplicate: 2.1 ug/L)
Hexavalent Chromium: Lab A: 0.079 ug/L (duplicate: 0.089 ug/L)
Hexavalent Chromium: Lab B: 0.14 ug/L (duplicate: 0.08 ug/L)

McMillan finished water:

Total Chromium: 1.7 ug/L (duplicate: 1.7 ug/L)
Hexavalent Chromium: Lab A: 0.052 ug/L (duplicate: 0.054 ug/L)
Hexavalent Chromium: Lab B: 0.08 ug/L (duplicate: 0.06 ug/L)

The water Washington Aqueduct produces and delivers is well within all EPA drinking water regulations. We remain committed to continuously provide safe, high-quality water to our customers.

Washington Aqueduct will continue to test for hexavalent chromium on a semiannual basis and we will react to any information or direction coming from EPA.

For more information on EPA and chromium visit EPA's website at http://water.epa.gov/drink/info/chromium/index.cfm